



European Monitoring Centre
for Drugs and Drug Addiction

TECHNICAL REPORT

Drug-related homicide in Europe: data protocol

October 2020

Legal notice

This publication of the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) is protected by copyright. The EMCDDA accepts no responsibility or liability for any consequences arising from the use of the data contained in this document. The contents of this publication do not necessarily reflect the official opinions of the EMCDDA's partners, any EU Member State or any agency or institution of the European Union.

PDF

ISBN 978-92-9497-550-8

doi: 10.2810/672590

TD-02-20-669-EN-N

Luxembourg: Publications Office of the European Union, 2020

© European Monitoring Centre for Drugs and Drug Addiction, 2020

Reproduction is authorised provided the source is acknowledged.



Recommended citation: European Monitoring Centre for Drugs and Drug Addiction (2020), *Drug-related homicide in Europe: data protocol*, Technical report, Publications Office of the European Union, Luxembourg.

About this report

This report is part of the EMCDDA activity around the development and improvement of drug supply indicators, which are designed to reflect developments in drug markets as well as the markets' wider harms and impact. The protocol in this document provides a framework for standardised drug-related homicide data processing, allowing an improved understanding of the broader ramifications of drug markets and international comparisons.

About the EMCDDA

The European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) is the central source and confirmed authority on drug-related issues in Europe. For over 25 years, it has been collecting, analysing and disseminating scientifically sound information on drugs and drug addiction and their consequences, providing its audiences with an evidence-based picture of the drug phenomenon at European level.

The EMCDDA's publications are a prime source of information for a wide range of audiences including: policymakers and their advisors; professionals and researchers working in the drugs field; and, more broadly, the media and general public. Based in Lisbon, the EMCDDA is one of the decentralised agencies of the European Union.



European Monitoring Centre
for Drugs and Drug Addiction

Praça Europa 1, Cais do Sodré, 1249-289 Lisbon, Portugal

Tel. +351 211210200

info@emcdda.europa.eu | www.emcdda.europa.eu

twitter.com/emcdda | facebook.com/emcdda

Acknowledgements

The European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) would like to thank Marieke Liem, Pauline Aarten, Janne Kivivuori, Martti Lehti, Nora Markwalder and Sven Granath (contract code CT.19.SAS.0064.1.0).

EMCDDA peer review group: Liesbeth Vandam, Andre Noor and Paul Griffiths.

EMCDDA project group: Teodora Groshkova, Andrew Cunningham and Roumen Sedefov.

Contents

Acknowledgements	3
Introduction	5
1. Background	6
2. Data sourcing: introducing the EHM framework.....	7
2.1. The strengths and limitations of national cause-of-death and police statistics	7
2.2. The EHM framework.....	7
2.3. Data structure	8
2.4. Inclusion criteria.....	8
2.5. Data sources.....	9
2.5.1. Multiple sources.....	9
2.5.2. Sources used for the identification of cases	9
2.5.3. Sources used for validating and supplementing information	9
2.5.4. Hierarchy in data sources.....	10
2.5.5. Missing data	10
3. Coding manual	12
3.1. Introducing the DRH module into the EHM framework.....	12
3.2. The EHM variables	12
3.2.1. Identification	12
3.2.2. Database structure	12
3.2.3. Incident characteristics	13
3.2.4. Perpetrator and victim characteristics	14
3.2.5. Criminal procedure	14
3.2.6. Operationalisation of EHM variables	14
3.3. DRH module.....	31
3.3.1. The DRH variables	31
3.3.2. Operationalisation of DRH variables	31
3.4. Notes on coding.....	34
4. Data management.....	36
4.1. Data confidentiality	36
4.2. Reporting on data	36
4.3. Data storage	36
References	37

Introduction

This report is part of the activity of the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) around the development and improvement of drug supply indicators, which are designed to reflect developments in drug markets as well as the markets' wider harms and impact (EMCDDA, 2017). The impact of drugs and drug markets goes beyond those who are directly exposed health and social problems resulting from drugs. In a wider sense, the issue is of serious concern in relation to the security situation in Europe and may deeply affect neighbourhoods and local communities, as drug use and drug markets can act as cross-cutting facilitators of all types of violence (EMCDDA and Europol, 2016; 2019), including drug-related homicide (DRH). DRH has the potential to act as a valuable indicator of wider drug-related violent crime and thus improve our understanding of the broader ramifications of drug markets. Comparing countries' DRH levels can be a valuable tool for identifying trends and new threats.

So far, the EMCDDA has invested in exploring how data and information on DRH can be improved at European level. An audit was conducted of academic research and data sources on DRH at national and European/international levels (EMCDDA, 2018). This initial work identified a range of challenges for data collection as well as inconsistencies in the data currently available in this area. These challenges illustrated the more general difficulty of quantifying the drug-crime relationship. To overcome the obstacles, the EMCDDA explored how an existing European homicide data-gathering platform — the European Homicide Monitor (EHM) — could be expanded to include specific DRH variables. The EHM is an international coding system that operationalises homicide characteristics using common definitions. It relies on information from the police, official criminal justice records, autopsy reports and auxiliary sources in the public domain. The EHM platform was augmented with specific drug-related variables, and a specific DRH data collection protocol was pilot tested in the Netherlands, Finland and Sweden (EMCDDA, 2019).

Following on from the 2018 and 2019 reports, this publication contains a revised version of the DRH data protocol, embedded in and extending the original framework for standardised general homicide data collection at European Union level. Both previous EMCDDA reports highlighted the importance of DRH as an indicator of drug-related violent crime in general, which can potentially provide an opportunity for an increased understanding of the harms and consequences of illicit drug markets. It is intended that this protocol will facilitate prospective research and the monitoring of trends in drug-related homicide in Europe, providing greater scope for identifying new drug-related security threats.

1. Background

Violence has long been endemic in the illegal drug trade ⁽¹⁾ (Gaston et al., 2019). According to Goldstein (1985), there are three (non-mutually exclusive) mechanisms that make up the drugs-violence nexus: psychopharmacological violence, economic-compulsive violence and systemic violence. In short, psychopharmacological violence is violence committed while under the influence of drugs. Economic-compulsive violence entails the use of violence to maintain an expensive drug addiction. Finally, systemic violence refers to violent crime as a product of the structure (i.e. traditionally aggressive patterns of interaction) of drug markets. More specifically, violence may be used to secure status and respect, enforce normative codes, settle disputes, protect drug territories, and deter or avenge transgressions (Gaston et al., 2019). In criminological terms, the illegality of drug markets precludes formal dispute settlement through the criminal justice system and may thus result in violence being used as a source of informal social control (Gaston et al., 2019).

Both crime trends literature and violence literature prominently link expanding drug markets with violence (for an overview, see Gaston et al., 2019). In the Nordic countries, for example, during the period 2007-2016 the percentage of perpetrators who were under the influence of drugs at the time of a homicide ranged from 19 % in Finland to 42 % in Iceland. Sweden (21 %), Denmark (25 %) and Norway (28 %) also showed high percentages (Lehti et al., 2019). Beyond the immediate conflict situation, 30 % of Finnish perpetrators and 37 % of Swedish perpetrators during the period 2003-2006 were described as drug dependent (Granath et al., 2011). In the Swiss context, the prevalence of perpetrators under the influence of drugs is considerable and depends highly on the type of homicide. Whereas in family and partner killings the percentages of intoxicated perpetrators are relatively low (2 % and 6 %, respectively), in criminal homicides and dispute homicides the percentages of perpetrators under the influence of drugs are 21 % and 8 %, respectively ⁽²⁾. These figures show a strong presence of drugs in European homicides. Recent US research reveals greater growth in drug-related homicides (DRHs) than in homicides of other types, with a reported 33 % increase between 2014 and 2016 (Rosenfeld et al., 2017). Scholars estimate that the large increase in US DRHs can account for 22 % of the nation's total homicide rise in 2015 (Rosenfeld et al., 2017).

Comparing countries' DRH levels can be a valuable tool for identifying trends and new threats (EMCDDA, 2018). A prior inventory on DRH data in Europe revealed that, while several European countries prepare DRH statistics — such as Czechia, Denmark, Finland and Germany — work in this area is strongly influenced by a country's legal terms or penal codes (de Bont et al., 2018). This data protocol seeks to facilitate prospective DRH data collection in Europe. It aims to do so under the European Homicide Monitor (EHM) framework (Granath et al., 2011). The EHM provides a standardised manual for homicide data processing, allowing international comparisons. The protocol in this document captures the dynamics of DRH and constitutes an addition to the EHM framework.

This protocol aims to give prospective researchers a hands-on description of how to code DRHs. It will do so by introducing in Chapter 2 the EHM framework and the data sources used to collect information on (drug-related) homicides. In Chapter 3, the coding manual of the EHM and the DRH module are presented. In Chapter 4, we will reflect on data reporting and data storage.

⁽¹⁾ In this protocol, the focus is on illicit drugs; it includes opioids, cannabis, cocaine and amphetamines, and does not include alcohol, tobacco or prescription drugs.

⁽²⁾ Walser et al., forthcoming.

2. Data sourcing: introducing the EHM framework

2.1. The strengths and limitations of national cause-of-death and police statistics

Most current international studies on homicide use multiple data sources, including a mix of health and criminal justice sources (Oberwittler, 2019). These sources are often considered timely and accurate. Furthermore, these sources contain data that were collected over a long observation period, allowing a more in-depth analysis of homicide trends over time.

Although insightful, the use of such hybrid statistics, however, is not without limitation. One of the most widely used sources for international comparisons on homicide — cause-of-death data — focuses on victim's cause of death. These data contain information on the annual number and characteristics of victims; however, there is little information on homicide perpetrators and the context in which the homicide took place. Other commonly used data sources for international comparisons include police statistics and criminal justice statistics. These statistics differ between countries because, for example, they rely on different penal codes or legal terms. Furthermore, while some national statistics may focus on a number of arrested or prosecuted homicide perpetrators, others may focus on detected homicides, making international comparison difficult. Importantly, these statistical data sources focus either on victims or on perpetrators, and hence do not allow a specification of the victim-perpetrator relationship or the type of homicide to be made. Finally, these statistical indices are often available at the aggregate level, restricting analyses to presenting only the numbers or rates of incidents, victims and/or perpetrators.

Considered together, these factors hamper an integrated overview of homicide, its patterns and incidence throughout Europe, and country comparisons (Liem, 2013; Liem and Pridemore, 2014).

2.2. The EHM framework

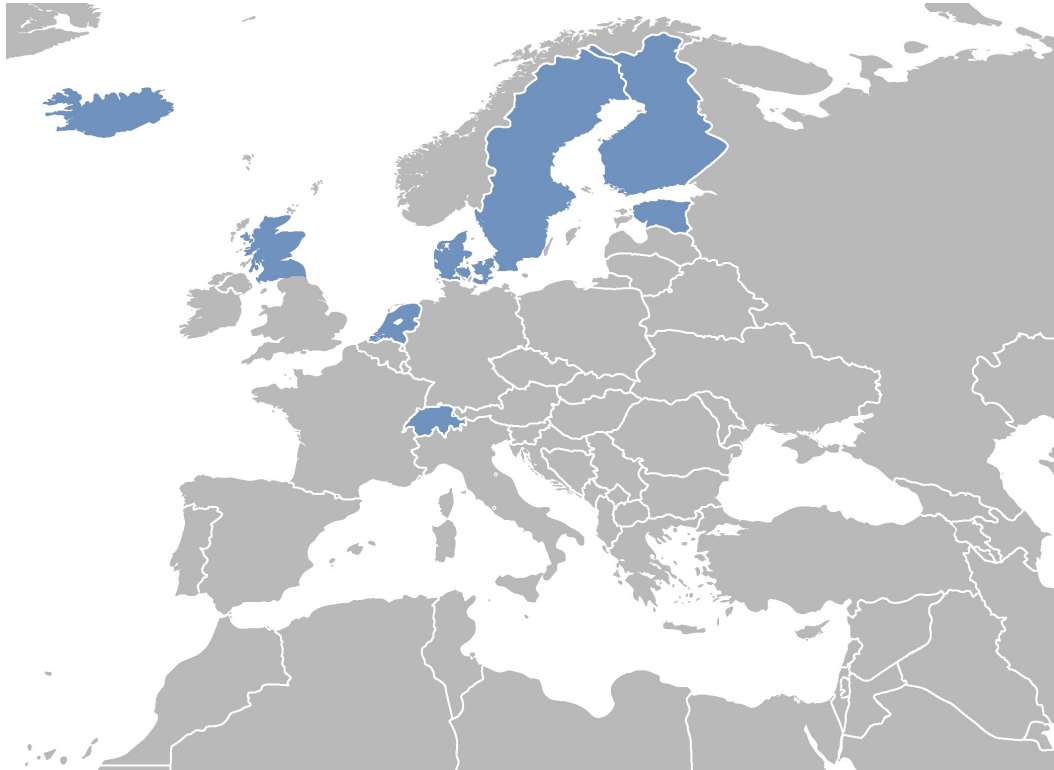
To overcome these difficulties, a group of European countries developed and disseminated the EHM concept, which provides a manual for standardised homicide data processing ⁽³⁾.

In its current form, several countries (see also Figure 1) have coded their national data according to the EHM format, allowing for international comparisons (see also Lehti et al., 2019). The EHM follows a uniform structure (same variables and values) and relies on information from the police, official criminal justice records, autopsy reports, newspaper articles and auxiliary public domain sources. The added value of using the EHM framework to identify DRHs lies in the fact that the EHM can link existing homicide typologies within the area of DRH. In other words, psychopharmacological, economic-compulsive and systemic violence can be linked to individual characteristics and could provide an in-depth understanding of this phenomenon (de Bont and Liem, 2017). It also allows patterns of homicide in different countries to be linked to their respective drug-related policies, and important insights into the relationship between drug policy, drug markets and homicide in an international comparison can therefore be gained.

Owing to national differences in legislation and the inauguration of the European Data Protection Directive (95/46/EC), the local EHM files (i.e. nationwide homicide data) are currently stored separately in each country. Joint analysis takes place by sharing syntaxes between countries. Because of the standardised structure of the data, the use of identical syntaxes is possible and enables identical analyses to be carried out everywhere.

⁽³⁾ For a detailed discussion of the EHM system, see Granath et al., 2011; Liem and Oberwittler, 2012; Liem et al., 2013; and Lehti et al., 2019.

FIGURE 1
Countries using the EHM framework



2.3. Data structure

The EHM incorporates case-level and individual-level homicide data, allowing multiple types of analysis to be carried out. The structure of the database also allows flexibility in descriptive disaggregation of homicide into relevant subtypes, such as DRH. Analogously, major categories such as DRH can be further disaggregated by any of the standard EHM variables capturing features of the victims, the perpetrators and the contexts, or combinations of these. Owing to the relatively high prevalence of DRH and the accumulation of EHM data, cell frequencies are likely to be sufficient for substantial analyses

2.4. Inclusion criteria

Adhering to the EHM inclusion criteria, homicide is defined as an intentional criminal act of violence, which results in the death of one or more individuals. This definition covers similar legal codes for homicide in European countries and includes the legal codes of murder, manslaughter, infanticide and assault leading to death. Attempted homicides, suicides, abortion, euthanasia and assistance with suicide should not be included in the data submitted to the EHM. Similarly, involuntary manslaughter and cases of intentional (by court decision) legally justified killings should be excluded from the data.

2.5. Data sources

2.5.1. Multiple sources

In collecting homicide data, information on all case, victim and perpetrator characteristics is likely to be based on several data sources. Nationally, data on homicides are typically scattered across more than one institution ⁽⁴⁾. Generally, these separate data sources do not contain a complete set of data on all homicides. Therefore, these sources should be integrated to create a comprehensive list of all homicide cases. Similarly, using multiple sources also allows information to be validated through triangulation and avoids double-counting. Data sources are thus used to identify homicide cases and cross-validate or supplement the information.

2.5.2. Sources used for the identification of cases

Depending on national availability, the following individual-level data sources can be used to collect and verify DRH data.

1. Police data. National, regional or local police data constitute a valuable source of DRH data, as they contain individual-level details of the cases and the arrests of the suspects (e.g. whether or not a case has been solved and when the suspect in question was arrested). In some European countries, the police make use of the EHM framework and code homicide cases for the purposes of homicide research. In other European countries, police data are limited to basic perpetrator and victim characteristics (age, gender, birth country).

2. Autopsy data. Medicolegal autopsies may provide a useful source of information on the crime scene and victim characteristics, including the cause of death. Such files typically contain autopsy photos, initial police reports and/or crime scene photos (Thomsen et al., 2019).

3. Prosecution data. Prosecution data typically provide information on suspects who are known and have been charged with murder or manslaughter. Prosecution data may thus be used as a source to supplement police data — they can provide an indication of whether the suspect was charged with murder or manslaughter, or with a lesser offence. Furthermore, prosecution data typically include detailed quantified information on the sentencing of the perpetrator and personal data such as gender and birth country.

2.5.3 Sources used for validating and supplementing information

Although the first three sources are (mainly) used to identify DRH cases, the following sources may be used to enrich the data with case-specific and individual-level details.

4. Media sources data. As homicide events are typically reported in the news media, this source may be used to obtain additional information on the homicide event and context. In doing so, researchers should aim to include news media only from reliable original media sources.

5. Criminal justice case files. Such case files include written reports that contain background information on the investigation of the cases by the police, information about the suspect (at times, this includes mental health reports) and information about the case (including the verdict). Note that such files may only be available if a suspect was charged.

6. Forensic mental health reports. These reports may give an account of the perpetrator's family background and a psychological/psychiatric account of his or her mental health in regard to the

⁽⁴⁾ Centralised national homicide monitoring systems, such as the Finnish Homicide Monitor, which is a research-based system that contains data on all homicides, are an exception. In such systems, the integration of various control stages (police, prosecutor, court) requires multiple data sources.

homicidal crime. Note that such reports may only be available for cases in which forensic mental health expertise was sought; however, they can also be part of the criminal justice case files (as is the case in the Netherlands and Switzerland). Please also note that restrictions regarding the use of such data may apply, given that they are considered health data in some contexts.

7. Criminal record data. Such data — either available in person-based files or in merged datasets — provide an insight into the criminal careers of individuals involved in the homicide event.

8. National statistics data. Finally, person-based national statistics data may include not only additional, detailed information on the family history of the perpetrators and victims of homicide, such as marital status, their living situation and educational attainments, but also social service provider information, such as the involvement of youth care services.

2.5.4. Hierarchy in data sources

The EHM generally relies on information from the police, official criminal justice records, autopsy reports, newspaper articles and auxiliary public domain sources, although there are slight variations between participating countries in terms of data sources used (Granath et al., 2011). Typically, case file reports, including police reports, court reports and evaluations written by forensic psychiatric experts, are considered to be the most comprehensive and most reliable source, particularly for DRH, since these documents contain a detailed account of an individual's motives, based on authentic information given by the perpetrators, their families and/or witnesses. Next, online court verdicts and digital data sources are considered the second most reliable sources, especially for officially established outcomes of the judicial process in terms of type of sanction and length of sentence. Furthermore, quantitative datasets made available by the police or other criminal justice institutions are considered the third most reliable sources. Usually, such quantitative data, for example instances of an individual's involvement in drug supply-related offences, are extracted from operational law enforcement databases, which are primarily designed to register police administrative processes, rather than being compiled for research purposes. For this reason, researchers should closely monitor the quality of such data before incorporating them into the dataset. Finally, information derived from media sources is considered the least reliable. Although these sources may offer comprehensive information collected by journalists, the information may also reflect journalists' interpretations.

In the event of contradictory information, information stemming from a source higher up the hierarchy should be used, thereby overriding information provided by sources at a lower level of the hierarchy. Furthermore, it should be emphasised that data quality may differ between countries and sources. Hence, it should be left to each participating country to decide on a hierarchy that best fits the goal of having the highest quality of data possible, based on which types of documents are considered the most reliable.

2.5.5. Missing data

A common challenge in gathering homicide data in general, including DRH data, is the issue of missing data. Missing data are an issue in many other large homicide datasets, including the Federal Bureau of Investigation's (FBI) supplementary homicide reports, the Center for Disease Control and Prevention's National Violent Death Reporting System (NVDRS) and the Chicago Homicide Dataset, to name a few.

The most prominent type of missing data in European homicide research pertains to perpetrator characteristics, the victim-perpetrator relationship and the context in which the homicide took place. Accurately documenting patterns and trends in homicide rates distinguished by the victim-perpetrator relationship and the context constitutes an important issue for the epidemiology of homicide in Europe. For example, the extent of DRHs relative to non-DRHs tells us a lot about the nature of violent crime in Europe, how it differs across countries and how it is changing over time. Yet, missing data

compromise the ability to reach theoretically relevant conclusions about the context and meaning of homicide rates (Liem, 2013).

One reason for missing homicide data is the voluntary nature of (detailed) reporting of homicides by law enforcement agencies across the country or the lack of mandatory reporting to a national authority altogether. Another reason for missing data includes unsolved cases. An unknown perpetrator implies an unknown motive, unknown circumstances and an unknown victim-perpetrator relationship. A persistent misconception in homicide research is that the 'unknowns' in the victim-perpetrator relationship variable equate to stranger homicides, because this type of homicide is more difficult to clear by arrest than those in which the victims knew their perpetrators. Decker (1993), however, showed that stranger homicides do not account for the majority of homicides classified as unknown relationships; in fact, they may be distributed among uncleared cases in the same proportions as they are among cleared homicide cases. More recently, based on EHM data, we showed that factors associated with criminal homicides are the same factors that contribute to difficulties in solving cases, such as male victims, victims with an ethnic minority background and the use of firearms (Liem et al., 2018). Among such homicides, even though the victim and the perpetrator may know each other, witnesses are not likely to share information (Litwin, 2004) and the use of a firearm leaves detectives little physical evidence to work with (Alderden and Lavery, 2007).

Although several statistical solutions have been applied previously in large-scale homicide databases — including imputation-based procedures, weighting procedures and model-based procedures — imputed data do not have the same standing as observed data. Statistical solutions for missing data are no substitute for data collection that results in no missing values. The solution therefore lies in minimising missing data by going back to the data source or consulting multiple data sources. Furthermore, missing data should be minimised by making efforts to follow up on homicides that are solved at a later stage and are therefore able to provide background information at a later stage as well. Another solution has been applied in the US-based National Violent Death Reporting System (NVDRS) (National Center for Injury Prevention and Control, 2003) data coding process. Today, the NVDRS operates in 18 US states. As more states join, research staff provide training sessions and guidance on adequately coding and entering data into the NVDRS software manual. Although costly, this elaborate process not only reduces the occurrence of missing data from the bottom up but also strengthens the internal validity of the data (Liem, 2013).

3. Coding manual

3.1. Introducing the DRH module into the EHM framework

To ensure comprehensive, uniform data collection and reporting on homicide, a total of 85 variables on the homicide incident, victim(s) and perpetrator(s) should be used. A description of the EHM database structure (taken from Granath et al., 2011) and an operationalisation of the 85 variables is described in Section 3.2.

However, the original EHM manual included two variables on drugs use. The DRUG variable taps into the situational presence of drugs during the commission of the crime. The other variable, DRUGADD, describes whether or not the persons could be regarded as dependent drug users ⁽⁵⁾. Owing to the policy and research needed to study DRH in greater detail, the EHM Steering Committee has decided to add a separate module of 12 variables to the EHM framework that capture the unique dynamics of DRH. This DRH module is discussed in Section 3.3. It should be noted that the coding of DRHs should be supported by a minimum set of variables from the original EHM.

3.2. The EHM variables

3.2.1. Identification

For each homicide incident (case), a variable **case description** (as a separate string variable — including a few sentences) is added to the dataset to facilitate the identification of a specific case. To facilitate the identification of individuals in other (police, public prosecution, criminal record, national statistics) databases, it may also be helpful for individual countries to add variables such as **first and last name** (and official names if available), **birth date**, **home addresses** and **personal identification numbers** (see Section 4.1 on data confidentiality).

3.2.2. Database structure

Each single homicide incident in the EHM framework is uniquely identified by a **case number**. Perpetrators and victims are linked to a case number and, in addition, are uniquely identified by a **serial number**. Each row in the database therefore represents a perpetrator or a victim. Furthermore, the database indicates for each individual (for both perpetrators and victims) if they are considered a **principal perpetrator** or a **principal victim**. The framework also contains information on the number of victims and perpetrators per homicide incident.

The following decision rules should be used when deciding who should be considered the principal perpetrator. In the event that there is just a body found and no one knows who the perpetrator is, there is no principal perpetrator (hence, this variable is scored as 'unknown'). In the event of more than one perpetrator/accomplice, the principal perpetrator is the one with the more severe homicide charge: murder over manslaughter. If the charges are the same, it is the one with the more severe verdict (murder over manslaughter; manslaughter over co-committing — 'complicity to'/'accessory to' — manslaughter); if these are the same, it is the one with longest sentence. If each of the aforementioned details and the level of sentencing are the same, the oldest perpetrator is chosen.

The principal victim is the victim with the closest relationship to the perpetrator. If the relationships between the victims and the perpetrator(s) are equally close, or the relationship is unknown, the victim who died first is regarded as the principal victim. If all the victims died at the same time or the exact time of death is unknown, the oldest victim should be regarded as the principal victim. If all the victims are the same age or if their age is unknown, the principal victim is chosen at random. For case-specific

⁽⁵⁾ TYPEHOM value 'criminal milieus' also refers to 'narcotics deals' but is not exclusively about such contexts. For this reason, the variable DRUGADD was added to the EHM manual.

analysis (such as trend analysis), the principal victim (there is always a victim in a homicide case) should be used as a unit of analysis.

Finally, a specific variable attached to each case indicates any **corresponding cases** (i.e. other cases that have some connection to the case in question). A string variable allows comments to be made on corresponding cases/repeat offending referring to either victims who are related or perpetrators killing victims on more than one occasion over the years.

3.2.3. Incident characteristics

For every incident (i.e. the homicide), the database includes information on the **date of the homicide**, the **year the incident was reported to the police**, and the **day, month and year that the crime was committed**. In addition, it includes information on whether or not the homicide incident took place on a **public holiday**. Furthermore, data are available on whether the homicide took place in an **urban area or a rural area** and the area of the country in which the homicide occurred, through the use of the **Nomenclature of Territorial Units for Statistics (NUTS) classification** set by Eurostat. These variables include the name of the village/city and municipality where the homicide was committed. This allows homicide data to be linked to aggregated information on those municipalities, such as the degree of urbanity, heterogeneity, residential mobility and so on.

For each homicide incident, information on the circumstances should be coded, such as the **time of day** at which the homicide was committed, the **number of days it took for the homicide to be discovered and who made the homicide known to the police**. Moreover, data on the presence of **eyewitnesses** to the homicide and the time it took for the police to **arrest** the perpetrator(s) should be included. For each victim, information on the **time of death** in hours of the day should be included. Finally, the framework allows **any other crimes** (besides the homicidal act) committed against the victim or perpetrator to be included. In terms of **locus delicti** and **modus operandi** of the homicide incident, the framework can capture information on the crime scene and whether or not it was committed in the area in which the victim and/or perpetrator lived. As for the modus operandi, the 10th revision of the International Classification of Diseases (ICD-10) is used to reflect the type of method used to kill the victim, for example a firearm. Additional variables indicate the **type and legality of the firearm** used. When multiple methods have been used, the method that is highest on the value list should be chosen. In addition, a separate variable reflects whether or not **multiple modi** were used in the homicide event.

The **type of homicide** is primarily based on the relationship between the (principal) victim and (principal) perpetrator, and the motive of the perpetrator. Here, a family relationship trumps the motive. Familial killings refer to lethal incidents between current or former spouses, or other family members. Intimate partner homicides are the most common type of familial killings. Criminal milieu killings consist of cases occurring in a criminal milieu — for instance, rip deals ⁽⁶⁾ and narcotic affairs — and homicides committed in conjunction with robberies. Other killings refer to homicides occurring outside family and criminal milieus and consist mostly of conflicts between friends and acquaintances. For instance, drunken brawls escalating to lethal incidents are classified into this category if they do not include family members or occur in a criminal milieu. Homicides occurring in criminal contexts are often seen as representing instrumental violence, whereas the great majority of alcohol-related violence is seen as expressive (for more detailed information on EHM classification, see Granath et al., 2011; Liem et al., 2013). The system does not allow multiple types of homicide; for instance, family-related homicides with an instrumental motive are always coded as family related, rather than

⁽⁶⁾ A so-called 'rip deal' is a fraudulent deal or a type of robbery occurring in the drug scene in which one party runs off with the money as well as the drugs, leaving the other party empty-handed.

as criminal milieu killings. Variables reflecting motives were designed to refine this classification (for example, a child homicide with a sexual component is therefore also viewed as a sexual homicide).

3.2.4. Perpetrator and victim characteristics

For all individuals involved in a homicide incident, the framework captures the **relationship between the victim and the perpetrator**. In the event of multiple victims and perpetrators, this relationship may differ within the same case. For all perpetrators and victims, information on basic sociodemographic variables, such as their **age** and **gender**, the **country of birth** of all individuals and their parents, and their **citizenship**, can be captured in the framework. In addition, variables that reflect the **civil status** of the individuals, whether or not they have **children**, their **housing situation**, their **professional status** and their **level of education** at the time of the homicide are included. Furthermore, for both perpetrators and victims, data should be included on addiction and the use of **alcohol** and **drugs** at the time of the homicide.

Next, the framework includes variables reflecting **prior violence** between the victim and perpetrator during the homicide event, the role of **mental illness** and whether or not the perpetrator committed **suicide** following the homicide.

To allow for case-level analyses, researchers may choose to add so-called combination variables. These combinations can be based on the information of the principal victim and the principal perpetrator. The most common combinations include the victim-perpetrator combination for gender (male-male, etc.), birth country (domestic versus foreign born) and the number of victim/perpetrators (single versus multiple victims and perpetrators).

3.2.5. Criminal procedure

With regard to the criminal investigation following the homicide incident, variables reflect whether the **police investigated** the homicidal incident as a murder or as a manslaughter, and whether the case is considered **cleared by arrest** or exceptionally cleared. Furthermore, individual-level variables reflect the number and type of officially recorded **previous convictions**. Finally, the framework allows data on the **prosecution**, **sanctioning** and **sentencing** of perpetrators following the homicide incident to be collected.

3.2.6. Operationalisation of EHM variables

Table 1 provides an overview of the operationalisations of the 85 EHM variables (see also Granath et al., 2011).

TABLE 1
Operationalisation of EHM variables

Variable number	Variable name	Complete variable name	Value labels	Coding instructions
Identification				
1	SERNR	Serial number	Open variable (numeric)	The serial number starts off with the submitting country's country code times 10 000. Add 1 for every new row. Each number must be unique (it must appear on only one row in the dataset), and its first digits must indicate the country of origin by country code (see the appendix in http://rep.ntu.ac.uk/id/eprint/28206/1/5724_Ganpat.pdf for a full list of country codes).

Variable number	Variable name	Complete variable name	Value labels	Coding instructions
2	CASENR	Case number	Open variable (numeric)	
NEW	CASEDESCRIPTION	Case description	Open variable (string)	Write a few sentences about what happened at the time of the crime, preferably in English.
Incident characteristics				
3	COUNTR	Country	30 = Greece 31 = Netherlands 32 = Belgium 33 = France 34 = Spain 36 = Hungary 39 = Italy 40 = Romania 43 = Austria 44 = United Kingdom 45 = Denmark 46 = Sweden 48 = Poland 49 = Germany 351 = Portugal 352 = Luxembourg 353 = Ireland 356 = Malta 357 = Cyprus 358 = Finland 359 = Bulgaria 370 = Lithuania 371 = Latvia 372 = Estonia 386 = Slovenia 420 = Czechia 421 = Slovakia	Choose the country that has submitted the data (it should be the same as the country in which the homicide occurred). The value is the same as the country code (see the appendix in http://rep.ntu.ac.uk/id/eprint/28206/1/5724_Ganpat.pdf for a full list of country codes).
4	NRVIC	Number of victims	Open variable (numeric) 999 = Unknown	State the number of victims involved in the case. A victim is defined as any person who is a victim of lethal violence. Murder attempts, other forms of violence and other crimes committed against others in the same incident should not be included.
5	NRPERP	Number of perpetrators	Open variable (numeric) 999 = Unknown	State the number of perpetrators involved in the case. A perpetrator is defined as any person who is suspected of and/or charged with homicide. Perpetrators who have been found not guilty are therefore included in the data.
6	CRIME	Legal type of homicide	1 = Murder 2 = Manslaughter (cases with mitigating circumstances) 3 = Assault resulting in death 4 = Infanticide 999 = Unknown	Indicate the type of homicide that has been reported to/is being investigated by the police. 'Manslaughter' also refers to 'aggravated manslaughter', and 'assault resulting in death' also refers to 'aggravated assault resulting in death'. 'Infanticide' is defined as the deliberate killing of an infant under the age of 1 year. If there are multiple perpetrators charged with different legal types of homicide, choose the most severe. See the definition of principal perpetrator.

Variable number	Variable name	Complete variable name	Value labels	Coding instructions
7	SOLVED	Has the crime been solved?	0 = No 1 = Yes 999 = Unknown	This means that cases that are cleared or 'exceptionally cleared' by the police are considered solved. However, slight national variations in the definition of when a case is considered solved may exist.
8	YEARREP	Year the crime was reported	Open variable (numeric) 999 = Unknown	State the year the crime became known to the police (four-digit number, e.g. 2008).
9	YEARCOM	Year the crime was committed	Open variable (numeric) 999 = Unknown	State the year the crime was committed (four-digit number, e.g. 2008).
10	MONTH	Month the crime was committed	1 = January 2 = February 3 = March 4 = April 5 = May 6 = June 7 = July 8 = August 9 = September 10 = October 11 = November 12 = December 999 = Unknown	State the month the crime was committed.
11	WDAY	Day the crime was committed	1 = Monday 2 = Tuesday 3 = Wednesday 4 = Thursday 5 = Friday 6 = Saturday 7 = Sunday 8 = Day unknown, Monday-Thursday 9 = Day unknown, Friday-Sunday 999 = Unknown	State the day of the week the crime was committed.
12	PUBHOL	Crime committed during a public holiday	0 = No 1 = Yes 999 = Unknown	Indicate whether or not the crime was committed during a public or national holiday (e.g. Christmas Eve). This does not include school holidays (e.g. summer holidays).
13	TIME	Time the crime was committed	1 = Morning (6.00 to 12.00) 2 = Afternoon (12.00 to 18.00) 3 = Evening (18.00 to 24.00) 4 = Night (0.00 to 6.00) 999 = Unknown	State the time of day that the crime was committed.
14	TIMEDISC	Number of days between the crime being committed and the crime being revealed or the body being discovered	Open variable (numeric) 9999 = Unknown	Indicate the number of days between the crime being committed and the crime being discovered. Value 0 = The crime was discovered within the same calendar day or, if the calendar day changed, within 12 hours after it was committed. Value 1 = The crime was discovered 1 day (with at least 12 hours marginal) after the crime was committed. For example, a crime committed late at night, at 23.30, and discovered (or first reported) at 2.30 is considered discovered within the same day (as is a crime committed at 5.30 and discovered at 19.00). A crime committed at 23.30 and discovered at 12.30 the next day, however, is considered discovered 1 day after the crime was committed.

Variable number	Variable name	Complete variable name	Value labels	Coding instructions
15	TIMDEATH	Number of hours between the crime being committed and time of death	Open variable (numeric) 999 = Unknown	Indicate the number of hours between the crime being committed and the victim's time of death. Value 0 = The victim died within the first hour. Value 1 = The victim died after one hour, etc.
16	VICDECEASED	Victim deceased before, during or after professional care?	1 = Deceased before professional medical care 2 = Deceased during professional medical care 3 = Deceased after professional medical care 999 = Unknown	Indicate if the victim died before, during or after professional medical care was provided, e.g. in an ambulance or at the hospital.
17	TIMEARRESTED	Number of days between the crime being committed and the principal perpetrator being arrested	Open variable (numeric) 9997 = Perpetrator committed suicide before arrest 9998 = Perpetrator unknown 9999 = Unknown	Indicate the number of days between the crime being committed and the principal perpetrator being arrested by the police. Code according to the same principle as that outlined in variable 14. If the perpetrator was arrested within the first day or within 12 hours after the crime, then choose value 0. If the perpetrator was arrested after the first day (with at least 12 hours marginal) choose value 1. Enter the value for the principal perpetrator in the row of the victim.
18	CRIMESCENE	Crime scene	-4 = Private home, resident unknown 1 = Private home of victim and perpetrator 2 = Private home of perpetrator 3 = Private home of victim 4 = Private home of other person (not the victim or the perpetrator) 5 = Institution, dormitory 6 = Hotel or motel 7 = Inside a car or other private vehicle 8 = Park, forest or recreational area 9 = Shop, restaurant or other place of entertainment and amusement (coffee shop, bar, amusement park, etc.) 10 = Street, road, public transport or other public place 11 = Workplace 12 = Other 999 = Unknown	Indicate where the act of lethal violence took place. This refers to where the crime was committed, not the place where the body was found. 'Private home' (values -4, 1, 2, 3, 4) means in or around the home, including the attic, basement, staircase and garden. If the homicide has taken place in a private home, but it is unclear which of the values 1-3 you should choose, then you should choose value -4. 'Institution, dormitory' (value 5) includes hospitals, prisons, dormitories and homeless shelters. Value 10 also applies to queues, car parks, on a train or in a school.
19	URBANRURAL	Was the crime committed in an urban area or a rural area?	1 = Urban 2 = Rural 999 = Unknown	Indicate whether the crime was committed in an urban area or a rural area. Each country is free to use the definition that best describes the division between urban and rural nationally.

Variable number	Variable name	Complete variable name	Value labels	Coding instructions
20	NUTS2	NUTS 2 code for the area where the crime was committed	Open variable (string)	Indicate in which NUTS 2 region the crime was committed. If unknown, leave blank.
21	NUTS3	NUTS 3 code for the area where the crime was committed	Open variable (string)	Indicate in which NUTS 3 region the crime was committed. If unknown, leave blank.
22	POLICEREP	Who made the crime known to the police?	1 = The victim or someone who was asked by the victim 2 = The perpetrator or someone who was asked by the perpetrator 3 = A relative or friend of the victim or perpetrator 4 = Other private person (witness, bystander, neighbour, etc.) 5 = The police themselves discovered the crime 6 = Other person on duty (e.g. medical staff, fire brigade, superintendent, caretaker) 7 = Other 999 = Unknown	Indicate who first reported the crime or made the crime known to the police or the authorities.
23	WITNESS	Were there any eyewitnesses?	0 = No 1 = Yes 999 = Unknown	Indicate whether or not there were any eyewitnesses to the homicide. A witness is any person other than a suspect or perpetrator who was present and observed the incident that led to the homicide or lethal violence. Being at the crime scene or hearing the crime does not qualify.
Victim/perpetrator characteristics				

Variable number	Variable name	Complete variable name	Value labels	Coding instructions
24	MODUS	Indicate the modus operandi of the homicide	<p>1 = Poisoning 2 = Exposure to corrosive or hot substances 3 = Hanging/strangulation/suffocation 4 = Drowning 5 = Firearm 6 = Bomb/explosive 7 = Smoke or fire 8 = Knife or other sharp object/weapon 9 = Blunt object/weapon 10 = Axe 11 = Push or shove (from/in front of something) 12 = Motor vehicle 13 = Hitting, kicking or other similar physical violence without a weapon 14 = Other 999 = Unknown</p>	<p>The labels are loosely based on the ICD-10 list for 'Assault' in the chapter 'External causes of morbidity and mortality' (WHO, 1990). Changes have been made to better suit the data.</p> <p>1 = ICD-10: X85, X88 2 = ICD-10: X86, X87, X89, X90, X98 3 = ICD-10: X91 4 = ICD-10: X92 5 = ICD-10: X93, X94, X95 6 = ICD-10: X96 7 = ICD-10: X97 8 = ICD-10: X99 9 = ICD-10: Y00 11 = ICD-10: Y01, Y02 12 = ICD-10: Y03 13 = ICD-10: Y04, Y07 14 = ICD-10: Y08, Y09</p> <p>The methods are listed in the same order as they are mentioned in ICD-10. If multiple methods have been used, choose the method that is highest up the list. For example, if the victim has been stabbed (value 8) and kicked (value 13), choose value 8. When multiple sources indicate that different types of violence have caused the death, submit the type given in the autopsy first. If there is no autopsy, then you should use — in the following order — a medical statement, a police statement, a media statement or your own assessment.</p>
25	KNIFE	Placement of knife-related violence on body	<p>0 = Knife not used 1 = Left chest 2 = Throat 3 = Abdomen/stomach 4 = Back 5 = Right chest 6 = Other body parts 7 = Knife was used but did not enter the victim's body 999 = Unknown 9999 = Unknown whether the knife was used or not</p>	<p>If the violence leading to the victim's death was knife related, indicate where the stab wounds were found on the body of the victim. The labels are listed from most severe (1 = Left chest) to least severe (6 = Other body parts). Indicate the most severe violence.</p> <p>If a knife was used and it is unclear where the stab wounds were located, use value 999.</p>
26	NRSTABS	Number of stabs	<p>Open variable (numeric) 999 = Unknown 9999 = Unknown if there were any stabs</p>	<p>Indicate the number of stab wounds on the victim's body.</p>
27	FIREARM	Licence circumstances when a firearm has been used	<p>0 = Firearm not used 1 = Legal firearm 2 = Illegal firearm 999 = Unknown 9999 = Unknown if firearm was used or not</p>	<p>If a firearm has been used, then you should indicate its legality.</p> <p>Legal = The perpetrator had a licence for it.</p> <p>Illegal = The firearm was illegal and/or the perpetrator had no licence to use it.</p>

Variable number	Variable name	Complete variable name	Value labels	Coding instructions
28	TYPEFIREARM	Type of firearm used to cause victim's death	<p>0 = Firearm not used 1 = Pistol, revolver or other handgun 2 = Rifle, shotgun or other long gun 3 = Machine gun 999 = Unknown 9999 = Unknown if firearm was used or not</p>	<p>Indicate the type of firearm that was used in the homicide. If multiple types of firearm were used, indicate the type from which the bullets that killed the victim were fired.</p> <p>Value 1 = Pistols, revolvers and other handguns are firearms designed to be held and operated by one hand, with the other hand optionally supporting the shooting hand.</p> <p>Value 2 = Rifles, shotguns or other long guns are firearms designed to be fired from the shoulder or held in both hands.</p> <p>Value 3 = Machine guns are firearms designed to fire numerous bullets in quick succession from an ammunition belt or large-capacity magazine. The three categories of firearms are, in order of appearance, based on the categories 2-7, 8-24 and 1 in the NVDRS coding manual (National Center for Injury Prevention and Control, 2003).</p>
29	VICVIOL	Victim's violence against perpetrator	<p>0 = Victim did not use any violence 1 = Victim used violence in self-defence 2 = Victim used violence first or in a non-self-defence manner 999 = Unknown</p>	<p>Indicate whether or not the victim used any violence against the perpetrator when the crime was committed.</p>
30	SUICIDE	Perpetrator's suicide	<p>0 = No 1 = Yes 2 = Suicide attempt only 99 = Perpetrator unknown 999 = Unknown</p>	<p>Indicate whether or not the perpetrator tried to commit/committed suicide after committing the crime. Earlier attempts are not to be included. In cases with multiple perpetrators, enter the value for each perpetrator in each row.</p> <p>In the row of the victim, you should indicate the answer for the principal perpetrator.</p>
31	SUICIDETIME	Time of the perpetrator's suicide	<p>0 = Perpetrator did not commit suicide 1 = 0-1 hours after the homicide 2 = 1-24 hours after the homicide 3 = 24 hours to 1 week after the homicide 4 = More than 1 week after the homicide 99 = Perpetrator unknown 999 = Unknown</p>	<p>Indicate when the perpetrator committed suicide. Suicide attempts are not to be included (value 0). In cases with multiple perpetrators, enter the value for each perpetrator in each row.</p> <p>In the row of the victim, you should indicate the answer for the principal perpetrator.</p>

Variable number	Variable name	Complete variable name	Value labels	Coding instructions
32	SUICIDEMETHOD	Method of suicide	<p>0 = Perpetrator did not commit suicide</p> <p>1 = Overdose, legal substance</p> <p>2 = Overdose, illegal substance</p> <p>3 = Hanging, suffocation, strangulation</p> <p>4 = Drowning</p> <p>5 = Firearm</p> <p>6 = Explosives</p> <p>7 = Smoke or fire</p> <p>8 = Knife/cutting</p> <p>9 = Blunt object</p> <p>10 = Jumping in front of or from something</p> <p>11 = Motor vehicle</p> <p>12 = Other</p> <p>99 = Perpetrator unknown</p> <p>999 = Unknown</p>	<p>Indicate the method of the suicide. The labels are loosely based on the ICD-10 list of 'Assault' under the chapter 'External causes of morbidity and mortality' (WHO, 1990). Changes have been made to better suit the data.</p> <p>1 = ICD-10: X60, X61, X63, X64, X65, X66, X67, X68, X69</p> <p>2 = ICD-10: X62, X64, X67, X68, X69</p> <p>3 = ICD-10: X70</p> <p>4 = ICD-10: X71</p> <p>5 = ICD-10: X72, X73, X74</p> <p>6 = ICD-10: X75</p> <p>7 = ICD-10: X76</p> <p>8 = ICD-10: X78</p> <p>9 = ICD-10: X79</p> <p>10 = ICD-10: X80, X8</p> <p>11 = ICD-10: X82</p> <p>12 = ICD-10: X77, X83, X84</p> <p>The methods are listed in the same order as they are mentioned in ICD-10. If multiple methods have been used, choose the method that is highest on the list. Suicide attempts are not included (value 0).</p>
33	TYPEHOM	Type of homicide (in broad terms)	<p>1 = Partner killing</p> <p>2 = Child killing within family</p> <p>3 = Infanticide</p> <p>4 = Other familial killing</p> <p>5 = Criminal milieu (rip deals, narcotics affairs, etc.)</p> <p>6 = Robbery killing: commercial business (shop, bank, taxi, etc.)</p> <p>7 = Robbery killing: private home</p> <p>8 = Robbery killing: street robbery (civilian victim)</p> <p>9 = Nightlife violence</p> <p>10 = Killing by a person with a mental disturbance (non-family member)</p> <p>11 = Other in non-criminal milieu</p> <p>12 = Killing by children, not family related</p> <p>13 = Child killed by adult, not family related</p> <p>14 = Sexual</p> <p>15 = Other</p> <p>999 = Unknown</p>	<p>Choose the type of homicide that best describes the case, in reference to the relationship, motive and situation between the perpetrator and the victim. The relationship between the victim and the perpetrator should usually be considered the most important variable when defining the type of homicide.</p> <p>Value 1 = Partner killing refers to all homicides that take place between two persons who have or have had an intimate relationship.</p> <p>Family members comprise any person with whom the victim has kinship as well as persons adopted by or married to a person with whom the victim has kinship.</p> <p>Value 2 = Child killing within family refers to children between the ages of 1 year and 18 years being killed by a family member.</p> <p>Value 3 = Infanticide refers to the killing of children up to 1 year of age.</p> <p>Value 4 = Cases in which a grown-up son or daughter is the victim or the perpetrator of a homicide involving, for example, their parents are defined as familial killings. Parent is defined as biological mother or father as well as anyone with whom the victim has or has had an equivalent social or legal relationship.</p> <p>Value 12 = Killing by children, not family related refers only to killings by individuals under the age of 14 years.</p> <p>Value 13 = Child killed by adult, not family related refers only to killings involving victims under the age</p>

Variable number	Variable name	Complete variable name	Value labels	Coding instructions
				of 14 years. Adult is defined as any person over the age of 18 years.
34	MREVENGE	Motive: revenge	0 = No, other motive 1 = Yes 999 = Unknown	Indicate whether or not revenge was a motive. In variables 34-46, multiple answers may be given if there is more than one motive. In the event of multiple perpetrators, indicate the motives for each of them in their respective rows. Indicate the motive of the principal perpetrator in the row for the victim.
35	MJEALOUSY	Motive: jealousy	0 = No, other motive 1 = Yes 999 = Unknown	Indicate whether or not jealousy was a motive.
36	MSEPARATION	Motive: separation	0 = No, other motive 1 = Yes 999 = Unknown	Indicate whether or not separation was a motive.
37	MTRIVIALITY	Motive: triviality	0 = No, other motive 1 = Yes 999 = Unknown	Indicate whether or not a triviality caused the homicide.
38	MOTTHAT	Motive: hate crime	0 = No, other motive 1 = Yes 999 = Unknown	Indicate whether or not the homicide was a hate crime.
39	MOTTHR	Motive: perpetrator threatened	0 = No, other motive 1 = Yes 999 = Unknown	Indicate whether or not the perpetrator being threatened was a motive.
40	MOTMEN	Mental illness/psychological disorder	0 = No, other motive 1 = Yes 999 = Unknown	Indicate whether or not a mental illness or psychological disorder was a motive.
41	MOTALT	Motive: altruism	0 = No, other motive 1 = Yes 999 = Unknown	Indicate whether or not altruism was a motive (e.g. a man killing his mother who is suffering from a severe and very painful chronic disease).
42	MOTINCEC	Was the motive financial but not in itself criminal?	0 = No, other motive 1 = Yes 999 = Unknown	Indicate whether or not the motive was financial but not in itself criminal, e.g. the homicide is a result of an action to get some borrowed object back.
43	MOTCEC	Was the motive criminal and financial?	0 = No, other motive 1 = Yes 999 = Unknown	Indicate whether or not the motive was financial and criminal, e.g. the homicide was the result of a robbery or burglary.
44	MOTSEX	Was the motive rape or another sexual offence?	0 = No, other motive 1 = Yes 999 = Unknown	Indicate whether or not the motive was of a sexual nature.
45	MOTCRIM	Was the motive of another criminal nature?	0 = No, other motive 1 = Yes 999 = Unknown	Indicate whether or not the motive was of another criminal nature.
46	MOTOTH	Was the motive different from those mentioned above?	0 = No 1 = Yes 999 = Unknown	Indicate whether or not the motive was different from those stated above in variables 34-45.

Variable number	Variable name	Complete variable name	Value labels	Coding instructions
47	RELAT	Relationship between victim and perpetrator	0 = Perpetrator and victim do not know each other 1 = Husband 2 = Ex-husband 3 = Boyfriend 4 = Ex-boyfriend 5 = Wife 6 = Ex-wife 7 = Girlfriend 8 = Ex-girlfriend 9 = Father 10 = Stepfather 11 = Mother 12 = Stepmother 13 = Child 14 = Stepchild 15 = Sibling 16 = Grandparent or great grandparent 17 = Other relative 18 = Housemate or flatmate (previous or present) 19 = Co-worker (previous or present) 20 = Classmate (previous or present) 21 = Teacher (previous or present) 22 = Schoolmate (previous or present) 23 = Patient (previous or present) 24 = Therapist (previous or present) 25 = Prostitute (previous or present) 26 = Purchaser of sexual services (previous or present) 27 = Neighbour 28 = Friend or long-time acquaintance 29 = Perpetrator and victim are slightly known to each other (not friends) 30 = New acquaintance (met in the last 24 hours) 31 = Partner or ex-partner (marital or engagement status unknown) 32 = Partner or ex-partner of the same sex; males (marital or engagement status unknown) 33 = Partner or ex-partner of the same sex; females (marital or engagement status unknown) 999 = Unknown	<p>Enter the value for the relationship that the victim had with the perpetrator — i.e. the victim is the variable value of the perpetrator.</p> <p>In cases of 'overlapping' relationships, e.g. when the victim is a neighbour as well as a friend of the perpetrator, use the value that describes the principal (first and/or most important) status of the relationship. If this is not possible, use the value that indicates the most objective circumstance in the relationship. In the event of neighbour and friend, the code for neighbour (value 27) should be used if the victim and perpetrator were neighbours before they were friends and/or because being neighbours is factual, while the extent of their friendship is harder to determine. If the victim is a mistress or lover of the perpetrator, code girlfriend (value 7) or boyfriend (value 3). If the victim is the child of the perpetrator's unmarried partner, code stepchild (value 14). If the victim is the parent of the perpetrator's partner, code other relative (value 17).</p> <p>In cases of partner relationships of the same sex, use the values 1-4 if it is a female-female relationship, and the values 5-8 if it is a male-male relationship. For example, if a woman is killed by a woman she is married to, the relationship is coded as 1, and if a man is killed by his ex-boyfriend the relationship is coded as 8. In same-sex relationships in which the marital or engagement status is unknown, use value 32 or value 33.</p>
48	PRETHREATSBYPERP	Previous unlawful threats by perpetrator towards victim	0 = No 1 = Yes, but without it being reported to the police 2 = Yes, and it has been reported to the police 999 = Unknown	<p>Indicate whether or not the perpetrator threatened the victim in an unlawful way prior to the crime.</p> <p>Value 1 = Threats occurred, but it is unclear if they were reported to the police.</p>
49	PRETHREATSBYVIC	Previous unlawful threats by victim towards perpetrator	0 = No 1 = Yes, but without it being reported to the police 2 = Yes, and it has been reported to the police 999 = Unknown	<p>Indicate whether or not the victim threatened the perpetrator in an unlawful way prior to the crime.</p> <p>Value 1 = Threats occurred, but it is unclear if they were reported to the police.</p>

Variable number	Variable name	Complete variable name	Value labels	Coding instructions
50	PREVIOLENCEBYPERP	Previous violence by perpetrator towards the victim	0 = No 1 = Yes, but without it being reported to the police 2 = Yes, and it has been reported to the police 999 = Unknown	Indicate whether or not the perpetrator was violent towards the victim prior to the crime. Value 1 = Violence occurred, but it is unclear if it was reported to the police
51	PERVIOLENCEBYVIC	Previous violence by victim towards the perpetrator	0 = No 1 = Yes, but without it being reported to the police 2 = Yes, and it has been reported to the police 999 = Unknown	Indicate whether or not the victim was violent towards the perpetrator prior to the crime. Value 1 = Violence occurred, but it is unclear if it was reported to the police.
52	TYPE	Is the individual a victim or a perpetrator?	0 = Victim 1 = Perpetrator	Indicate whether the case row concerns a victim or a perpetrator.
53	PRINCIPAL	Is the individual a principal victim or a principal perpetrator in the homicide case?	0 = No 1 = Yes, principal perpetrator 2 = Yes, principal victim 999 = Unknown	Indicate whether the row concerns a victim or a perpetrator who can be considered a principal individual in the case. The principal perpetrator is the perpetrator who has been prosecuted (see variable 72). If more than one perpetrator is prosecuted, then the principal perpetrator is the one with the most severe sentence (see variable 73). If two or more perpetrators have equal sentences, then choose the one with the most severe sanction (see variable 74). If these are also equal, then it is the one with the closest relationship to the victim (see variable 47). If the relationships are considered to be the same, choose randomly. The principal victim is the victim with the closest relationship to the perpetrator. If the relationships between the victims and the perpetrator are equally close, or the relationship is unknown, choose the victim who died first. If the relationship is equal or unknown, choose the oldest victim as the principal victim. If all the victims are the same age or if their age is unknown, choose randomly.
54	GENDER	Gender of the individual	1 = Male 2 = Female 999 = Unknown	State the gender of the individual.
55	AGE	Age of the individual	Open variable (numeric) 150 = Unknown, 15 years or over 151 = Unknown, under 15 years 999 = Unknown	State the age of the individual (at the time of the crime).

Variable number	Variable name	Complete variable name	Value labels	Coding instructions
56	BIRTHCOUNTRY	Birth country of the individual	<p>0 = Same country as that in which the crime took place</p> <p>1 = Canada</p> <p>2 = Unites States</p> <p>3 = Puerto Rico</p> <p>999 = Unknown</p> <p>-998 = Unknown foreign country</p> <p>-997 = Unknown Europe</p> <p>-996 = Unknown North America</p> <p>-995 = Unknown South America</p> <p>-994 = Unknown Africa</p> <p>-993 = Unknown Asia (west parts)</p> <p>-992 = Unknown Asia (east parts)</p> <p>-991 = Unknown Oceania</p> <p>-990 = Other</p>	<p>Choose the birth country of the individual. Use the official country code for the nation in question (see the appendix in http://rep.ntu.ac.uk/id/eprint/28206/1/5724_Ganpat.pdf for a full list of country codes).</p> <p>The United States and Puerto Rico have the same country code as Canada (value 1). Therefore, use value 2 for the United States and value 3 for Puerto Rico.</p> <p>Note the different 'unknown' values at the bottom of the list. If individuals were born in countries/regions that no longer exist, e.g. former Yugoslavia and the USSR, and the part in which they were born according to the new values (e.g. Serbia, Bosnia, Belarus, etc.) is unknown, code them as being born in the biggest new country by population. At present (2011): Yugoslavia = Serbia and USSR = Russia.</p>
57	CITIZ	Citizenship of the individual	<p>0 = Same country as that in which the crime took place</p> <p>1 = Canada</p> <p>2 = Unites States</p> <p>3 = Puerto Rico</p> <p>999 = Unknown</p> <p>-998 = Unknown foreign country</p> <p>-997 = Unknown Europe</p> <p>-996 = Unknown North America</p> <p>-995 = Unknown South America</p> <p>-994 = Unknown Africa</p> <p>-993 = Unknown Asia (west parts)</p> <p>-992 = Unknown Asia (east parts)</p> <p>-991 = Unknown Oceania</p> <p>-990 = Other</p>	<p>Indicate the citizenship of the individual. In cases of double citizenship, choose the country of residence first and the country of birth second. Use the official country code for the nation in question (see the appendix in http://rep.ntu.ac.uk/id/eprint/28206/1/5724_Ganpat.pdf for a full list of country codes).</p> <p>The United States and Puerto Rico have the same country code as Canada (value 1). Therefore, use value 2 for the United States and value 3 for Puerto Rico.</p> <p>Note the different 'unknown' values at the bottom of the list. If individuals were born in countries/regions that no longer exist, e.g. former Yugoslavia and the USSR, and the part in which they were born according to the new values (e.g. Serbia, Bosnia, Belarus, etc.) is unknown, code them as being born in the biggest new country by population. At present (2011): Yugoslavia = Serbia and USSR = Russia.</p>

Variable number	Variable name	Complete variable name	Value labels	Coding instructions
58	PARENTS	Birth country of the individual's parents	0 = Same country as that in which the crime took place 1 = Canada 2 = Unites States 3 = Puerto Rico -999 = Unknown -998 = Unknown foreign country -997 = Unknown Europe -996 = Unknown North America -995 = Unknown South America -994 = Unknown Africa -993 = Unknown Asia (west parts) -992 = Unknown Asia (east parts) -991 = Unknown Oceania -990 = Other	<p>Indicate the country of birth of one parent if only one parent was born abroad, and the country of birth of both parents if they are from the same country. If the parents were both born abroad but in different countries, it is up to the submitting country to choose the birth country of the father or the mother of the individual. Use the official country code for the nation in question (see the appendix in http://rep.ntu.ac.uk/id/eprint/28206/1/5724_Ganpat.pdf for a full list of country codes).</p> <p>The United States and Puerto Rico have the same country code as Canada (value 1). Therefore, use value 2 for the United States and value 3 for Puerto Rico.</p> <p>Note the different 'unknown' values at the bottom of the list. If individuals were born in countries/regions that no longer exist, e.g. former Yugoslavia and the USSR, and the part in which they were born according to the new values (e.g. Serbia, Bosnia, Belarus, etc.) is unknown, code them as being born in the biggest new country by population. At present (2011): Yugoslavia = Serbia and USSR = Russia.</p>
59	CIVIL	Civil status	1 = Married 2 = Cohabitants 3 = In a boyfriend/girlfriend relationship 4 = Single 5 = Divorced 6 = Widowed 999 = Unknown	State the civil status of the individual.
60	CHILD	Does the individual have children?	0 = No 1 = Yes 999 = Unknown	Indicate whether the individual has children or not. Having children means that the individual is a parent according to the national legal definition in the country where the homicide was committed.
61	HOUSESIT	Housing situation of the individual	0 = Cohabiting with partner 1 = Cohabiting with both parents or step-parents 2 = Cohabiting with one parent or step-parent 3 = Living alone (with or without children) 4 = Cohabiting with friend 5 = Temporarily living with someone 6 = Homeless 7 = Closed institution 8 = Other 999 = Unknown	<p>Indicate the housing situation of the individual.</p> <p>Value 0: Partners who live together on and off are regarded as cohabiting with partner.</p> <p>Value 4: Cohabiting with friend also means cohabiting with relatives other than parents, step-parents or children (e.g. siblings, cousins, etc.)</p> <p>Value 7: Closed institution applies to prisons, psychiatric wards, etc.</p>

Variable number	Variable name	Complete variable name	Value labels	Coding instructions
62	PROF	Professional status of the individual	0 = Working class 1 = Intermediate 2 = Managers and professionals 3 = Retired 4 = Unemployed 5 = Sick-listed or disabled 6 = Not yet of school age 7 = Student 8 = Military service 9 = Housewife/ house husband/stay-at-home parent 10 = Asylum seeker 11 = Imprisoned or in a similar institution 12 = Other 999 = Unknown	Values 1-3 are based on the European Socio-economic Classification.
63	EDUC	Level of education of the individual	0 = Not completed compulsory school education 1 = Compulsory school education 2 = Higher education 3 = Occupational education 4 = Not started school 5 = Enrolled in compulsory school education 6 = Enrolled in higher education 7 = Enrolled in occupational education 999 = Unknown	Indicate the highest level of education that the individual has completed. Value 2: Compulsory school education is defined according to the national legal definition in the country in which the homicide was committed.
64	DRINK	Had the individual been drinking alcohol at the time of the crime?	0 = No, nothing in the case indicates this 1 = Yes, there are some indications 2 = Yes, there are definite indications 999 = Unknown	Indicate whether or not the individual had been drinking alcohol at the time of the crime. Some indications mean that there are circumstances in the case that indicate that the individual had been drinking alcohol at the time of the crime, e.g. empty bottles or cans or other paraphernalia, the presence of other persons who had been drinking alcohol and a recent history of alcoholism. Definite indications mean that there is explicit information about the individual having been drinking alcohol at the time of the crime.
65	DRUG	Had the individual been taking drugs at the time of the crime?	0 = No, nothing in the case indicates this 1 = Yes, there are some indications 2 = Yes, there are definite indications 999 = Unknown	Indicate whether or not the individual had taken any drugs at the time of the crime. Drugs refer to the use of 'narcotics' (heroin, morphine, etc.) as well as stimulants (cocaine, amphetamine, etc.) and hallucinogens (ecstasy, hashish, etc.). Excessive use (i.e. more than prescribed) of legally prescribed drugs is also included in the definition. Some indications mean that there are circumstances in the case that indicate that the individual had taken drugs at the time of the crime, e.g. drug paraphernalia, the presence of other persons who have been taking drugs and a recent history of drug abuse. Definite indications mean that there is explicit information about the individual having been taking drugs at the time of the crime.

Variable number	Variable name	Complete variable name	Value labels	Coding instructions
66	ALCOHOLIC	Is the individual an alcoholic?	0 = No, nothing in the case indicates this 1 = Yes, there are some indications 2 = Yes, there are definite indications 999 = Unknown	Indicate whether or not the individual is known to be an alcoholic. Some indications mean that there are circumstances in the case that indicate that the individual has excessive drinking patterns, such as consuming large amounts of alcohol over a period of several days. Definite indications mean that the individual has been diagnosed and/or treated clinically.
67	DRUGADD	Is the individual a drug addict?	0 = No, nothing in the case indicates this 1 = Yes, there are some indications 2 = Yes, there are definite indications 999 = Unknown	Indicate whether or not the individual is known to be a drug addict. Drug dependence refers to the use of 'narcotics' (heroin, morphine, etc.) as well as stimulants (cocaine, amphetamine, etc.) and hallucinogens (ecstasy, hashish, etc.) Excessive use (i.e. more than prescribed) of legally prescribed drugs is also included in the definition. Some indications mean that there are circumstances in the case that indicate that the individual had excessive drug use patterns at the time of the crime, such as consuming 'hard' or large amounts of drugs over a period of several days. Definite indications mean that the individual has been diagnosed and/or treated clinically.
68	PSYCH	Does the individual have a history of mental illness or suffer from a psychological disorder?	0 = No, nothing in the case indicates this 1 = Yes, there are some indications 2 = Yes, there are definite indications 999 = Unknown	Indicate whether or not the individual has a history of mental illness or is suffering from a psychological disorder. Some indications mean that there is information about or circumstances in the case that indicate that the individual has a history of mental illness, e.g. distressed psychological or behavioural patterns and self-expressed concern over mental health. Definite indications mean that the person has been diagnosed and/or treated clinically.
69	VIOLENTHISTORY	Does the individual have a history of violence?	0 = No 1 = Yes 999 = Unknown	Indicate whether or not the individual has a history of violence. History of violence is defined as having been reported to the police for violent crimes previous to the homicide incident.

Variable number	Variable name	Complete variable name	Value labels	Coding instructions
70	OTHCRIM	Were any other crimes committed against the individual during the homicide event?	0 = No, no other crimes were committed against the individual during the homicide event 1 = Sexual assault against the individual 2 = Other crime against the individual 3 = The individual was the witness of a crime 999 = Unknown	Indicate whether or not there were any other crimes committed against the individual during the homicide event. The data in this variable refer to the specific individuals on each row, not the case overall. So, if the perpetrator was robbed by the victim, for example, then code 'no' (value 0) in the row of the victim and code 'other crime' against the individual (value 2) in the row of the perpetrator. If more than one value is applicable for one individual, choose the value that is highest on the list, e.g. sexual assault (value 1) before other crimes (value 2).
71	AREA	The individual's relationship with the region or area where the crime was committed	0 = Living in another region/area/city 1 = Living in the same region/area/city 999 = Unknown	Indicate whether the individual lives in the same region/area/city as the one where the homicide took place or in a different region/area/city. It is up to each submitting country to choose a suitable geographical unit to best describe the individual's relationship with the place where the homicide was committed.
72	PROSECUTED	Has the suspect been prosecuted for homicide?	0 = No, there is no suspect 1 = No, the suspect has not yet been arrested 2 = No, the suspect is too young to be prosecuted 3 = No, the suspect is deceased 4 = No, other reason 5 = Yes 6 = Yes, but only for other crime(s) 999 = Unknown	Indicate whether or not the suspect has been prosecuted for or charged with homicide. In the event of appeal, enter the details from the court of first instance.
73	SENTENCED	Has the perpetrator been sentenced?	0 = No, the perpetrator was found not guilty 1 = No, the perpetrator was not held accountable for his/her actions because of mental illness 2 = No, the perpetrator is deceased 3 = No, not sentenced for other reasons 4 = Yes, for homicide 5 = Yes, for other crime(s) 99 = Perpetrator unknown 999 = Unknown	Indicate whether or not the perpetrator has been sanctioned. For variables 72-74, in the event of appeal, enter the details from the court of first instance. The label 'perpetrator convicted of other crime' refers to other crimes committed at the same time as the homicide, not crimes committed at another time but for which the perpetrator is sentenced at the same trial. If the perpetrator has not yet been sentenced but is going to be, choose value 3. In the event of a combination of homicide (value 4) and other crime(s) (value 5) choose value 4.

Variable number	Variable name	Complete variable name	Value labels	Coding instructions
74	SANCTIONED	Which sanction has the perpetrator been given?	0 = Perpetrator not sanctioned 1 = Prison 2 = Acute psychiatric care 3 = Long-term psychiatric care 4 = Prison and psychiatric care (acute or long term) 5 = Youth prison 6 = Youth prison and psychiatric care 7 = Youth institutional treatment 8 = Youth prison and youth institutional treatment 9 = Other 999 = Unknown	Indicate the sanction that the perpetrator has been given. The term sanctioned is used to avoid the exclusion of sanctions that are not followed by a sentence. Value 0: Enter 'not sanctioned' for all known perpetrators who have not been sanctioned, whatever the reason (perpetrator dead, found not guilty, etc.). Value 3: Long-term psychiatric care refers to a sanction of acute psychiatric care plus long-term psychiatric care.
75	LENGTHSENTENCE	Length of sentence	Open variable (numeric) 9998 = Lifetime 9999 = Unknown	Indicate the length of the sentence in number of days (30 days in 1 month, 365 days in 1 year). Sentence reduction is not included. Code 9999 if the perpetrator is sentenced to a time-restricted sanction, but the length of this sanction is unknown. If the perpetrator has not been sentenced, leave the variable blank. Leave it blank if the perpetrator has only been sanctioned for other crimes.
76	PREHOM	Has the perpetrator previously been sentenced for homicide?	0 = No 1 = Yes 999 = Unknown	Indicate whether or not the perpetrator has been found guilty of homicide prior to this homicide event.
77	PREVIO	Has the perpetrator previously been sentenced for other violent crimes?	0 = No 1 = Yes 999 = Unknown	Indicate whether or not the perpetrator has been found guilty of other violent crime prior to the crime. Violent crime refers to all assault crimes excluding those already covered by variables 75, 77 and 78.
78	PRESEX	Has the perpetrator previously been sentenced for sexual crimes?	0 = No 1 = Yes 999 = Unknown	Indicate whether or not the perpetrator has been found guilty of sex crimes prior to the homicide.
79	PREROB	Has the perpetrator previously been sentenced for robbery?	0 = No 1 = Yes 999 = Unknown	Indicate whether or not the perpetrator has been found guilty of robbery prior to the homicide.
80	PREPROP	Has the perpetrator previously been sentenced for crimes against property?	0 = No 1 = Yes 999 = Unknown	Indicate whether or not the perpetrator has been found guilty of property crime prior to the homicide.
81	PREDRUG	Has the perpetrator previously been sentenced for drug crimes?	0 = No 1 = Yes 999 = Unknown	Indicate whether or not the perpetrator has been found guilty of drug crimes prior to the homicide.

Variable number	Variable name	Complete variable name	Value labels	Coding instructions
82	PRETRAF	Has the perpetrator previously been sentenced for traffic violations?	0 = No 1 = Yes 999 = Unknown	Indicate whether or not the perpetrator has been found guilty of traffic violations prior to the homicide.
83	PREOTH	Has the perpetrator previously been sentenced for crimes other than those stated above?	0 = No 1 = Yes 999 = Unknown	Indicate whether or not the perpetrator has been found guilty of crimes other than those stated above in variables 74-81 prior to the homicide.
84	PRECON	Number of previous convictions	0 = No 1 = Yes 999 = Unknown	Indicate the perpetrator's number of previous convictions (not the number of crimes). All convictions count (independent of which sanction is given). In the event of appeal, enter the details from the court of first instance.
85	CORR	Corresponding cases	0 = No 1 = Yes 999 = Unknown	<p>If a perpetrator or victim in the case is connected to any other case (for example, when the perpetrator of one homicide is the victim of another or when one person commits multiple homicides at different times), this is indicated by entering the corresponding serial number. When there are no indications of corresponding cases, choose value 99.</p> <p>Victims and perpetrators in the same case, as well as cases with multiple victims or perpetrators, are not indicated here. Instead, they are connected through the case number variable (variable number 2).</p>

3.3. DRH module

3.3.1. The DRH variables

The following 12 variables reflect Goldstein's conceptual framework (Goldstein, 1985), which was designed to gain a deeper understanding of the relationship between drugs and homicide. These variables reflect psychopharmacological violence, economic-compulsive violence and systemic violence. For **psychopharmacological homicide**, additional variables reflect the **types of drugs** and the **amount of drugs** the victim and/or perpetrator had been using, and whether these **drugs were licit or illicit** in the country under study during the selected time period. To determine if cases of **(robbery) homicide** constitute **economic-compulsive homicide**, additional variables reflect **what the perpetrator intended to steal**. Finally, new variables allow a detailed assessment of the nature of **systemic violence occurring within the broader criminal milieu** associated with (violent) drug trade.

3.3.2. Operationalisation of DRH variables

Table 2 provides an overview of the operationalisations of these 12 DRH variables.

TABLE 2
Operationalisation of DRH variables

Variable number	Variable name	Complete variable name	Value labels	Coding instructions
Drug-specific characteristics				
86	HOMDRUG	Was the homicide drug related?	0 = No 1 = Yes: psychopharmacological 2 = Yes: economic-compulsive 3 = Yes: systemic 999 = Unknown	<p>Indicate whether or not the homicide was drug related.</p> <p>Psychopharmacological violence = The homicide was caused by the drug use of those involved.</p> <p>Economic-compulsive violence = The homicide was committed to support drug use (e.g. if the perpetrator killed the victim to steal their drugs or money to obtain drugs or the victim tried to commit robbery for drugs but was killed during the effort).</p> <p>Systemic violence = The homicide was the product of the structure of the drugs market (e.g. rip deals and assassinations).</p> <p>In the event of multiple options, choose the lowest value.</p>
87	HOM_DRUGS_PHAR	Was the homicide a psycho-pharmacological drug-related killing?	0 = No 1 = Yes 999 = Unknown	Indicate whether or not the homicide was primarily a psycho-pharmacological drug-related killing.
88	HOM_DRUGS_EC	Was the homicide an economic-compulsive drug-related killing?	0 = No 1 = Yes 999 = Unknown	Indicate whether or not the homicide was primarily an economic-compulsive drug-related killing.
89	HOM_DRUGS_SYST	Was the homicide a systemic drug-related killing?	0 = No 1 = Yes 999 = Unknown	Indicate whether or not the homicide was primarily a systemic drug-related killing.
90	DRUGTYPE	What kind of drug had the individual taken at the time of the crime?	1 = Opiates and opioids 2 = Cocaine 3 = Cannabis 4 = Amphetamines 5 = Sedatives and tranquilisers 6 = GHB 7 = MDMA 8 = Other 9 = Psychedelics 10 = No drugs 999 = Unknown	<p>Indicate whether or not the individual had taken drugs at the time of the crime and the type of drug.</p> <p>The following types/groups of drugs are based on the EMCDDA-Europol drug-markets report 2019 (see http://www.emcdda.europa.eu/system/files/publications/12078/20192630_TD_0319332ENN_PDF.pdf) and are listed in the following order: from the highest harm to others (value 1) to the lowest harm to others (value 9).</p> <p>Value 1 = Opiates and opioids — this includes heroin, methadone, buprenorphine, tramadol and fentanyl.</p> <p>Value 2 = Cocaine — hydrochloride (powder) and crack cocaine</p> <p>Value 3 = Cannabis (any form)</p> <p>Value 4 = Amphetamine, methamphetamine (crystal meth)</p> <p>Value 5 = Sedatives and tranquilisers (e.g. benzodiazepines, ketamine)</p> <p>Value 6 = GHB (gamma hydroxybutyrate)</p> <p>Value 7 = MDMA (3,4-methylenedioxy</p>

Variable number	Variable name	Complete variable name	Value labels	Coding instructions
				<p>methamphetamine) (often known as ecstasy when in tablet form or MD in crystal form)</p> <p>Value 8 = Other (e.g. anabolic steroids, qat/khat)</p> <p>Value 9 = Psychedelics (e.g. lysergic acid diethylamide — LSD; mushrooms)</p> <p>If the individual had taken more than one type of drug at the time of the crime, choose the drug that causes the most harm to others. For example, if the individual had taken heroin (value 1) and cannabis (value 3), then value 1 should be selected. The hierarchy of 'harm to others' is based on Nutt, King and Phillips (2010).</p> <p>Fill in this variable for each perpetrator and victim.</p>
91	POLYDRUG	Had the individual taken multiple drugs at the time of the crime?	<p>0 = No</p> <p>1 = Yes</p> <p>999 = Unknown</p>	Fill in this variable for each perpetrator and victim.
92	HOMDOS	How much of the drug had the individual taken?	Open variable (string)	If available, indicate the amount of drug(s) that the individual had taken at the time of the crime.
93	DRUGTAKEN	How had the individual taken the drugs?	<p>1 = Smoking</p> <p>2 = Injection</p> <p>3 = Orally (swallowing)</p> <p>4 = Orally (chewing)</p> <p>5 = Inhalation</p> <p>6 = Other</p> <p>7 = Combination</p> <p>999 = Unknown</p>	Fill in this variable for each perpetrator and victim.
94	DRUGLEG	Did the individual take licit or illicit drugs at the time of the crime?	<p>0 = Licit</p> <p>1 = Illicit</p> <p>10 = No drug</p> <p>999 = Unknown</p>	Indicate whether the individual had taken licit or illicit drugs at the time of the crime.
95	ROBKILLTYPE	If it was a robbery killing, what did the perpetrator (intend to) steal?	<p>0 = Money (to buy drugs)</p> <p>1 = Money (for other purpose or purpose unknown)</p> <p>2 = Goods (to exchange/sell for drugs)</p> <p>3 = Goods (for other purpose or purpose unknown)</p> <p>4 = Drugs (to feed their costly drug habit)</p> <p>5 = Other</p> <p>9 = Not a robbery killing</p> <p>999 = Unknown</p>	<p>Indicate whether or not the homicide was a drug-related robbery, and if so specify how.</p> <p>If there are multiple answers, choose the main motive.</p> <p>Note: bold indicates economic-compulsive violence</p> <p>Note: only fill in this variable if HOM_DRUGS_EC is coded 'yes'. If it is coded 'no', leave this variable empty.</p>

Variable number	Variable name	Complete variable name	Value labels	Coding instructions
96	ECOCOMDRUG	If it was an economic-compulsive homicide, what did the perpetrator (intend to) obtain?	1 = Opiates and opioids 2 = Cocaine 3 = Cannabis 4 = Amphetamines 5 = Sedatives and Tranquilisers 6 = GHB 7 = MDMA 8 = Other 9 = Psychedelics 10 = Money (to buy drugs) 11 = Goods (to exchange/sell for drugs) 12 = Not an economic-compulsive killing; 999 = Unknown	Indicate whether or not the homicide was an economic-compulsive drug-related killing, and if so specify how. If there are multiple answers, choose the main motive. Note: only fill in this variable if HOM_DRUGS_EC is coded 'yes'. If it is coded 'no', leave this variable empty.
97	CRIMMILTYPE	If the killing occurred in a criminal milieu, how can the homicide be described?	0 = Rip deal (not drug related) 1 = Rip deal (drug related) 2 = Turf war (not drug related or unknown) 3 = Turf war (drug related) 4 = Retaliation/revenge (not drug related or unknown) 5 = Retaliation/revenge (drug related) 6 = Other feud (not drug related or unknown) 7 = Other feud (drug related) 10 = Not a criminal milieu killing 999 = Unknown	Indicate whether or not the homicide was a criminal milieu drug-related killing, and if so specify how. If there are multiple answers, choose the main motive. Note: bold indicates systemic violence. Note: only fill in this variable if HOM_DRUGS_SYS is coded 'yes'. If it is coded 'no', leave this variable empty.
	RELAT_DRH	The victim is the ... of the perpetrator	0 = Parent 1 = Child 2 = Brother/sister 3 = (Ex-)husband/wife 4 = Other family 5 = Lover 6 = Friend or acquaintance 7 = Employer, employee or colleague 8 = Neighbour 9 = Drug customer 10 = Drug dealer 11 = Fellow drug user 12 = Fellow drug dealer 13 = Customer (no drugs) 14 = Patient 15 = Doctor or other medical profession 16 = Housemate/flatmate (not family) 17 = Tenant or landlord 18 = Student 19 = Teacher 20 = Other (drug related) 21 Other (not drug related) 999 = Unknown	Specify the relationship between the victim and the perpetrator. This variable is similar to variable 47 (RELAT). However, this variable is specifically tailored to capture the relationship between the victim and the perpetrator of DRHs. The additions can be found in bold. Note: bold indicates (potential indicator of) systemic violence.

3.4. Notes on coding

Coding involves the transformation of narrative descriptions into an alphanumerical designation. The issue of coding becomes relevant when previously collected and previously coded homicide data are combined, such as in the EHM. Leaving aside the definitional issues that surround homicide, aspects that are universally coded are gender and age of the victim. However, challenges may arise when coding variables — which on the surface may appear to be straightforward — appear culturally homogeneous and context dependent on closer inspection (Liem, 2013).

In its current form, the European Homicide coding scheme has tended towards a lowest common denominator, with the best example being 'other' types of homicide. For some analyses, this may result in a high percentage of homicide types being scored as 'other'. One of the lessons learned from assembling the EHM is to allow for these unique settings by leaving room for a short narrative in collecting and merging data so that homicides occurring at night in Finland, for example, can still be recognised within their cultural context (e.g. homicides preceded and precipitated by heavy drinking in the kitchen). Other examples of country-specific and culture-specific settings of homicide that should be maintained because of their cultural uniqueness include mafia-related homicides in Italy and honour-related homicides among immigrant groups in western Europe (Liem, 2013). To capture these cultural nuances while allowing for meaningful comparisons between countries over time, participants can add additional country-specific and context-specific variables to the EHM framework, as long as these additions are discussed with the EHM steering committee in advance.

4. Data management

4.1. Data confidentiality

All identifying information, including personal information of homicide victims and perpetrators, such as names and addresses, should be removed in the analysis stage. Case-level and individual-level homicide data constitute sensitive data. Prior to engaging in data collection, country collaborators should secure national permissions and, depending on the type of data consulted, institutional and organisational permissions. These permissions should include all members of the respective national research teams (including PhD students, postdoctoral researchers, principal investigators and other individuals working with the primary data).

Currently, owing to national differences in legislation and the European Data Protection Directive, each country participating in the EHM framework maintains its own data. Comparative analyses are conducted by sharing syntaxes that can be run by each country individually. Findings on an aggregate level can be freely shared between countries, keeping in mind the restrictions outlined in Section 4.2. When collecting DRH data across countries, each researcher involved in the process needs to have signed the EHM memorandum of understanding as well as a data confidentiality and aggregate data sharing agreement, stipulating reciprocal data release.

4.2. Reporting on data

Owing to the often unique natures of homicides, de-identified data do not ensure complete anonymity. In quantitative reporting, all cell counts smaller than five should be collapsed into larger categories to avoid identification based on sociodemographic or contextual characteristics.

4.3. Data storage

To reiterate, because of national differences in legislation and the inauguration of the European Data Protection Directive, local EHM files (i.e. nationwide homicide data) are currently stored separately in each country. Joint analysis takes place by sharing syntaxes between countries. Because of the standardised structure of the data, the use of identical syntaxes is possible and enables identical analyses to be carried out everywhere. These will be made available once each country has signed the confidentiality agreement and the EHM memorandum of understanding.

Researchers in each participating European Union (EU) country must comply with the relevant national legislation (including applicable EU regulation) and ethical regulation in their national context. In terms of storage, specifically coded, unidentified homicide data as contained in the framework should be stored according to institutional and national data regulations. In the event of future studies on this topic, after the proposed work is finished, renewed ethical approval from each data source should be sought.

References

- Alderden, M. A. and Lavery, T. A. (2007), 'Predicting homicide clearances in Chicago: investigating disparities in predictors across different types of homicide', *Homicide Studies* 11(2), pp. 115-132.
- de Bont, R., Groshkova, T., Cunningham, A. and Liem, M. (2018), 'Drug-related homicide in Europe — a first review of data and sources', *International Journal of Drug Policy* 56, pp. 137-143.
- de Bont, R. and Liem, M. (2017), *Drug-related homicide in Europe part 1: research report*, Institute of Security and Global Affairs, The Hague.
- Decker, S. H. (1993), 'Exploring victim-offender relationships in homicide: the role of individual and event characteristics', *Justice Quarterly* 10(4), pp. 585-202.
- EMCDDA (European Monitoring Centre for Drugs and Drug Addiction) (2017), *Developing drug supply monitoring in Europe: current concepts*, EMCDDA Papers, Publications Office of the European Union, Luxembourg (https://www.emcdda.europa.eu/publications/emcdda-papers/developing-drug-supply-monitoring_en).
- EMCDDA (2018), *Drug-related homicide in Europe: a first review of the data and literature*, EMCDDA Papers, Publications Office of the European Union, Luxembourg.
- EMCDDA (2019), *EMCDDA pilot study of drug-related homicide in Finland, the Netherlands and Sweden*, EMCDDA Technical reports, Publication Office of the European Union, Luxembourg.
- EMCDDA and Europol (2016), *EU drug markets report: in-depth analysis*, Publications Office of the European Union, Luxembourg (<http://www.emcdda.europa.eu/system/files/publications/2373/TD0216072ENN.PDF>).
- EMCDDA and Europol (2019), *EU drug markets report: in-depth analysis*, Publications Office of the European Union, Luxembourg (https://www.emcdda.europa.eu/publications/joint-publications/eu-drug-markets-report-2019_en).
- Gaston, S., Cunningham, J. P. and Gillezeau, R. (2019), 'A Ferguson effect, the drug epidemic, both or neither? Explaining the 2015 and 2016 U.S. homicide rises by race and ethnicity', *Homicide Studies* 23(3), pp. 285-313.
- Goldstein, P. J. (1985), 'The drugs/violence nexus: a tripartite conceptual framework', *Journal of Drug Issues* 15(4), pp. 143-174.
- Granath, S., Hagstedt, J., Kivivuori, J., Lehti, M., Ganpat, S. M., Liem, M. and Nieuwbeerta, P. (2011), *Homicide in Finland, the Netherlands and Sweden — a first study on the European Homicide Monitor data*, Swedish Council for Crime Prevention, Stockholm.
- Lehti, M., Kivivuori, J., Bergsdóttir, G. S., Engvold, H., Granath, S., Jónasson, J. O., Liem, M. et al. (2019), *Nordic homicide report — Homicide in Denmark, Finland, Iceland, Norway and Sweden, 2007-2016*, Research Briefs 37/2019, Institute of Criminology and Legal Policy, University of Helsinki, Helsinki.
- Liem, M. (2013), 'A brief history of the future of European homicide', in Schwarzenegger, C. and Kuhn, A. (eds), *Criminology — Criminal Policy — Criminal Law*, Stämpfli Publishers, Zurich.
- Liem, M., Ganpat, S. M., Granath, S., Hagstedt, J., Kivivuori, J., Lehti, M. and Nieuwbeerta, P. (2013), 'Homicide in Finland, the Netherlands, and Sweden: first findings from the European Homicide Monitor', *Homicide Studies* 17(1), pp. 75-95.
- Liem, M. and Oberwittler, D. (2012), 'Homicide followed by suicide in Europe', in Liem, M. and Pridemore, W. A. (eds), *Handbook of European homicide research: patterns, explanations, and country studies*, Springer, New York, pp. 197-215.
- Liem, M. and Pridemore, W. A. (2014), 'Homicide in Europe', *European Journal of Criminology* 11(5), pp. 527-529.
- Liem, M., Suonpää, K., Lehti, M., Kivivuori, J., Granath, S., Walser, S. and Killias, M. (2018), 'Homicide clearance in Western Europe', *European Journal of Criminology*, doi:10.1177/1477370818764840.

- Litwin, K. J. (2004), 'A multilevel multivariate analysis of factors affecting homicide clearances', *Journal of Research in Crime and Delinquency* 41(4), pp. 327-351.
- National Center for Injury Prevention and Control (2003), *National Violent Death Reporting System coding manual*, National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, Atlanta.
- Nutt, D. J., King, L. A. and Phillips, L. D. (2010), 'Drug harms in the UK: a multicriteria decision analysis', *The Lancet*, 376(9752), pp. 1558-1565.
- Oberwittler, D. (2019), 'Lethal violence: a global view on homicide', in *Oxford research encyclopedia of criminology and criminal justice*, Oxford University Press, Oxford, doi:10.1093/acrefore/9780190264079.013.402.
- Rosenfeld, R., Gaston, S., Spivak, H. and Irazola, S. (2017), *Assessing and responding to the recent homicide rise in the United States*, US Department of Justice, National Institute of Justice, Washington, DC.
- Thomsen, A.H., Leth, P.M., Hougen, H.P., Villesen, P., and Brink, O. (2019), 'Homicide in Denmark 1992–2016', *Forensic Science International: Synergy*, 1, pp. 275-282.
- WHO (World Health Organization) (1990), 'External causes of morbidity and mortality', in *International classification of diseases and related health problems, 10th revision*, WHO, Geneva.